

Appl. No. 10/027,190
Reply to Office action of 09/05/2003

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REMARKS/ARGUMENTS

In reply to the Office Action mailed September 5, 2003, Applicants respectfully request reconsideration and allowance of the claims in the subject application. In the Office Action, the inventorship was corrected, the Examiner issued a restriction requirement and rejected claims 1-13 provisionally elected in the application. In reply, Applicants affirm the election, cancel claims 14-20 from the application, amend claims 1 and 9 and add new claims 21-27. Accordingly, claims 1-13 and 21-27 are pending in the subject application.

In the Office Action, the Examiner restricted the application between claims 1-13 of Group I, drawn to a process for converting sulfur compounds in a hydrocarbon stream and claims 14-20 of Group II, drawn to an apparatus for contacting a hydrocarbon with alkali. Applicants have affirmed their provisional election to prosecute the claims of Group I, have canceled claims 14-20 from the application and added new claims 21-27, drawn to a process for converting sulfur compounds in a hydrocarbon stream.

The Examiner rejected claims 1-13 under 35 U.S.C. §103(a) as being obvious over U.S. Patent 2,228,028 (the "Brower patent") in view of U.S. Patent 2,337,467 (the "Hewlett patent"). Applicants respectfully traverse the rejection. All the claims in the subject application recite converting "hydrogen sulfide to a sulfide salt." The Examiner acknowledges that the Brower patent does not disclose that hydrogen sulfide is converted at page 4 of the Office Action. However, the Examiner contends that the Hewlett patent discloses that hydrogen sulfide can be removed from hydrocarbons by contacting the hydrocarbon with a caustic solution. Id. However, Applicants respectfully submit that the teachings of the Hewlett patent and the Brower patent cannot be combined in this manner to show that hydrogen sulfide can be converted to a sulfide salt in the extractor 2 of the Brower patent because the Brower patent teaches specifically to avoid converting hydrogen sulfide in the extractor 2. The Brower patent indicates that if the feed contains hydrogen sulfide, it "may conveniently be treated in the conventional H₂S removal plant 3, hydrogen sulfide being expelled through line 9." Page 2, lines 31-34, right-hand column; see also page 3, lines 30-34, left-hand column. Moreover, the Brower patent indicates that the feed to the extractor 2 "is extracted with an aqueous solution of a caustic alkali under conditions primarily to remove the thiophenols only." Page 2, lines 40-43, right-hand column (emphasis added). Hence, one of ordinary skill in the art reading the Brower patent would learn that it is undesirable to extract hydrogen sulfide in the extractor 2 because it would affect the chemistry which is attempting only to remove the thiophenols in the extractor 2. Hence, one of ordinary skill in the art would not apply the teachings of the Hewlett patent to extract hydrogen sulfide in the extractor 2 of the Brower patent because the Brower patent teaches against extracting hydrogen sulfide in the extractor 2. Hence, one of ordinary skill in the art would not be motivated to combine the teachings of the Hewlett and Brower patents.

Moreover, Applicants have amended claim 1 to recite "mixing a hydrocarbon stream and an alkaline stream" and "feeding said hydrocarbon stream previously mixed with said alkaline stream to a prewash section." Claim 9 has been amended to have a

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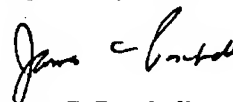
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similar recitation and newly added claim 21 recites, "mixing a hydrocarbon stream and an alkaline stream in a line to a prewash section." Support for these amendments is found on page 8, lines 7-9 and 19-20 of the application. The Examiner contends that it would have been obvious "to one having ordinary skill in the art at the time the invention was made to have modified the process of Brower by feeding the hydrocarbon to the spent alkali because mixing of the two components is critical and feeding one with the other would result in good mixing." Action, page 5. However, no teaching from a prior art reference showing a motivation to mix alkali and hydrocarbon feed prior to entry to an extractor vessel is cited. Moreover, in the Brower patent, line 13 which carries the alkaline stream to the extractor 2 enters into the top of the extractor 2 near where the alkaline stream is withdrawn from the extractor vessel through line 17. The arrangement in the Brower patent is inconducive to mixing the hydrocarbon distillate and the alkaline stream in line 13 which delivers the alkaline stream to the extractor vessel because there would be insufficient residence time in the extractor 2 to allow for the hydrogen sulfide to react with the alkaline stream. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection for obviousness of claims 1 and 9 and at least for the same reasons, claims 2-8 and 10-13 depending therefrom. For at least the same reasons, allowance of new claims 21-27 is also respectfully requested.

In the Office Action, claims 1, 7 and 8 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 11-17 of copending Application No. 10/027,153. Applicants respectfully submit that the amended claims in the subject application are not obvious over the claims of the cited patent application because claims 11-17 do not teach or render obvious mixing the hydrocarbon stream with an alkaline stream prior to entering into the prewash section. Accordingly, Applicants respectfully request reconsideration and withdrawal of the obviousness-type double patenting rejection of claims 1, 7 and 8.

Applicants respectfully request reconsideration and allowance of claims 1-13 and 21-27. Should the Examiner have any questions regarding this matter, please feel free to call the undersigned.

Respectfully submitted,



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